This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original) A pixel cache for a three-dimensional (3D) graphics accelerator, comprising:

a z-data storage unit that reads z-data from a frame memory and provides the read z-data to a pixel rasterization pipeline; and

a color data storage unit that in advance reads and stores color data from the frame memory at the same time when the z-data storage unit reads the z-data from the frame memory, and provides the color data to the pixel rasterization pipeline only when the result of predetermined z-test is determined to be a success in the pixel rasterization pipeline.

2. (original) The pixel cache of claim 1, further comprising a color pixel buffer that reads in advance the color data from the frame memory and stores the color data in the color data storage unit only when the result of z-test is determined to be a success in the pixel rasterization pipeline.

3. (original) The pixel cache of claim 2, wherein the color pixel buffer includes four or eight entries.

4. (original) The pixel cache of claim 1, wherein the result of z-test is determined to be successful when a pixel that is being rasterized is displayed on a screen, and determined to be not successful when the pixel is hidden on the screen.

5. (original) The pixel cache of claim 1, wherein the z-data storage unit reads z-data required from the frame memory only when the z-data required is not stored in the z-data storage unit.

6. (original) A 3D graphics accelerator comprising:

a z-cache that reads and stores z-data from frame memory;

a color cache that in advance reads and stores color data from the frame memory at the same time when the z-cache reads the z-data from the frame memory;

a z-test unit that reads the z-data from the z-cache and performs a predetermined z-test on the z-data; and

a color processor that reads color data from the color cache and performs a predetermined coloring processing on the color data when the result of z-test is determined to be successful.

7. (original) The 3D graphics accelerator of claim 6, further comprising a color pixel buffer that in advance reads and stores color data from the frame memory, and stores the color data in the color cache only when the result of z-test is determined to be successful.

8. (original) The 3D graphics accelerator of claim 7, wherein the color pixel buffer includes four or eight entries.

9. (original) The 3D graphics accelerator of claim 6, wherein the result of z-test is determined to be successful when a pixel that is being rasterized is displayed on a screen, and determined to be not successful otherwise.

10. (original) The 3D graphics accelerator of claim 6, wherein the z-cache reads z-data required from the frame memory only when the z-data required is not stored in the z-cache.

11. (currently amended): A method of accelerating 3D graphics, comprising:

reading z-data from frame memory and storing the z-data in a z-cache;

in advance reading color data from the frame memory and storing the color data in a color cache at the same time when the z-cache reads the z-data from the frame memory;

reading z-data from the z-cache and performing a predetermined z-test on the z-data; and

reading the color data from the color cache and performing a predetermined coloring processing on the color data, when the result of z-test is determined to be a success.

12. (original) The method of claim 11, wherein the result of z-test is determined to be successful when a pixel that is being rasterized is displayed on a screen, and determined to be not successful otherwise.

13. (original) The method of claim 11, wherein z-data required is read from the frame memory only when the z-data required is not stored in the z-cache.

14. (currently amended): A method of accelerating 3D graphics, comprising:

reading z-data from frame memory and storing the z-data in a z-cache;

in advance reading color data from the frame memory and storing the color data in a color pixel buffer at the same time when the z-cache reads the z-data from the frame memory;

reading z-data from the z-cache and performing a predetermined z-test on the z-data;

storing the color data, which is stored in the color pixel buffer, in a color cache when the result of z-test is determined to be a success; and

reading the color data from the color cache and performing a predetermined coloring processing on the color data, when the result of z-test is determined to be a success.

15. (original) The method of claim 14, wherein the result of z-test is determined to be successful when a pixel that is being rasterized is displayed on a screen, and determined to be not successful otherwise.

16. (original) The method of claim 14, wherein during reading z-data from frame memory and storing the z-data in a z-cache, z-data required is read from the frame memory only when the z-data required is not stored in the z-cache.